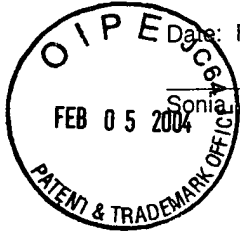


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Date: February 4, 2004

Sonia V. McVean
Sonia V. McVean



PATENT
50626.17

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Neil McLELLAN et al.	Art Unit: 1765
Serial No.: 09/802,678	Examiner: Unknown
Filing Date: March 09, 2001	
For: LEADLESS PLASTIC CHIP CARRIER WITH ETCH BACK PAD SINGULATION	

COMMENTARY RE INFORMATION DISCLOSURE STATEMENT

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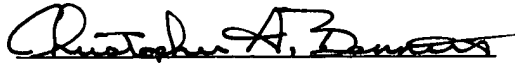
Dear Sir:

In accordance with 37 CFR §1.56, and in recognition of their duty to disclose to the United States Patent and Trademark Office relevant information known to be material to patentability, Applicants herewith submit a copy of the prior art listed on the attached Information Disclosure Statement (Form PTO-1449), including English abstracts where needed. The statement is not a representation that all of the information cited is necessarily effective as prior art against the application.

Applicants respectfully request that the disclosed reference be made of record in the subject application.

Respectfully submitted,

Date: February 4, 2004

A handwritten signature in black ink, appearing to read "Christopher A. Bennett", written over a horizontal line.

Attorneys for Applicant(s)

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Facsimile: (703) 385-5080



A DOCPHOENIX

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____ COCIN ____
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____ CRFE ____
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____ PEFRRSEQ ____
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Miscellaneous Internal Document

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____ PGA9 ____
Req for Corrected Pat App Publication

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____ A.NE ____
After Final Amendment

____ A.PE ____
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____ PET. ____
Petition

____ RUSH ____
OPUBS Printer Query

____ SEQLIST ____
Sequence Listing

____ SPEC ____
Specification

____ SPEC NO ____
Specification Not in English



US 20030015780A1

(19) **United States**(12) **Patent Application Publication** (10) Pub. No.: **US 2003/0015780 A1****Kang et al.**(43) Pub. Date: **Jan. 23, 2003**(54) **BUMPED CHIP CARRIER PACKAGE USING
LEAD FRAME AND METHOD FOR
MANUFACTURING THE SAME**(52) U.S. Cl. 257/684; 257/738; 257/737;
257/796(76) Inventors: **In Ku Kang, Cheonan-city (KR); Sang
Ho Ahn, Suwon-city (KR)**(57) **ABSTRACT**

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1101 Wilson Boulevard
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(21) Appl. No.: **10/118,944**(22) Filed: **Apr. 10, 2002**(30) **Foreign Application Priority Data**

Jul. 19, 2001 (KR) 2001-43446

Publication Classification(51) Int. Cl.⁷ H01L 23/06; H01L 23/48;
H01L 23/52; H01L 23/28

An improved bumped chip carrier (BCC) package according to the present invention includes a resin-molded lead frame encapsulating an attached semiconductor integrated circuit (IC) and a plurality of interconnecting wire bonds attaching a plurality of contact pads on the IC to an associated plurality of solder-covered external contact terminals that are integrated in the lead frame. By integrally processing the external contact terminals, bonding wires may be affixed using a single wire bonding process. A method for manufacturing the BCC package preferably includes a dual photoresist patterning process accompanied by a dual wet etching process to create a plurality of highly reliable external contact terminals having improved bonding between the contact terminals and the encapsulating resin mold.

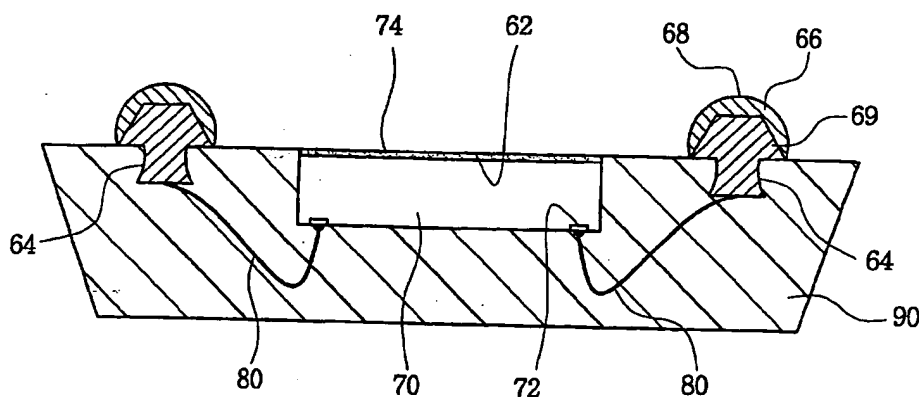


FIG. 1
(PRIOR ART)

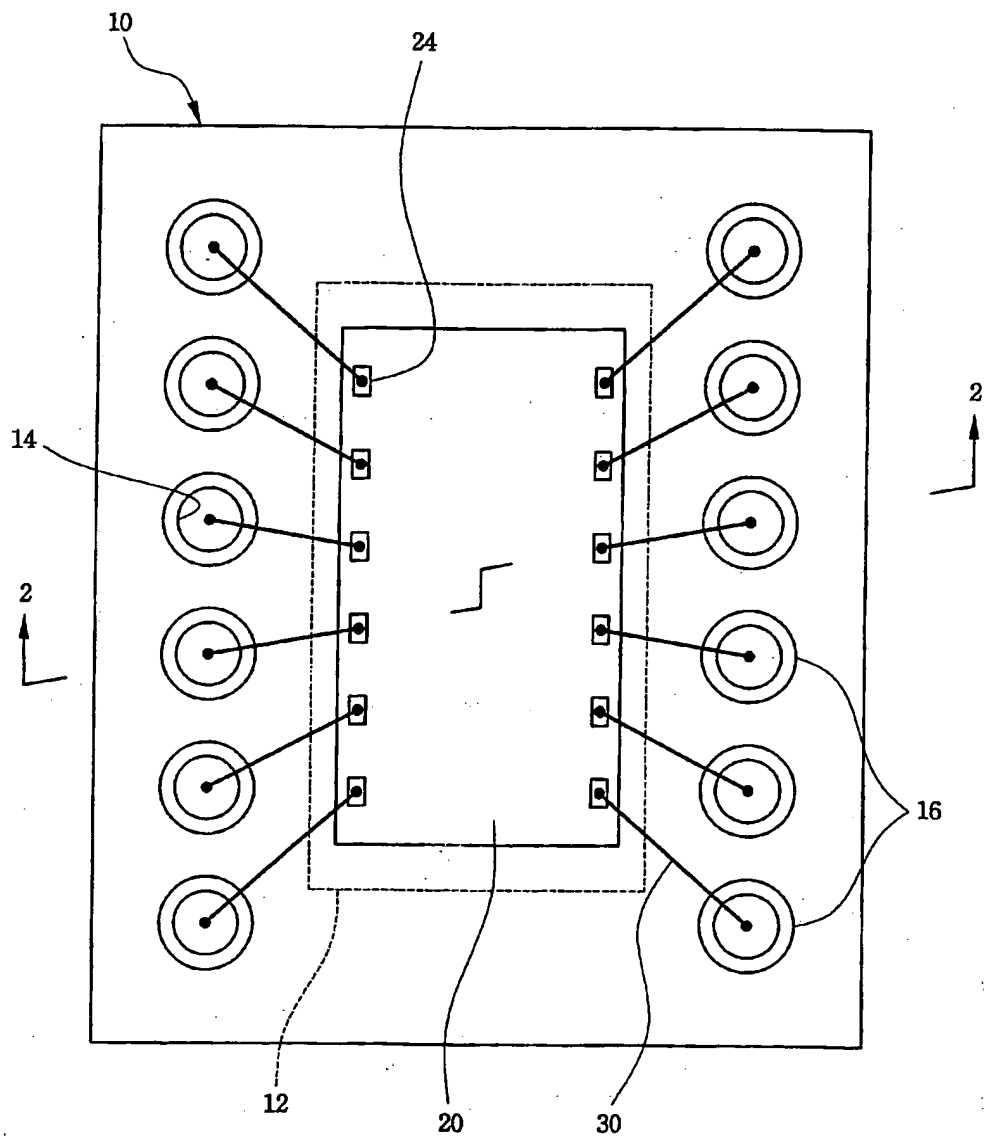


FIG. 2
(PRIOR ART)

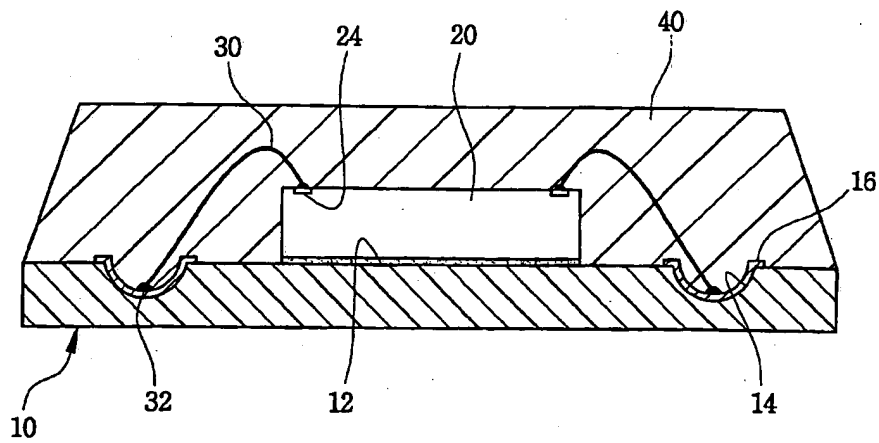


FIG. 3
(PRIOR ART)

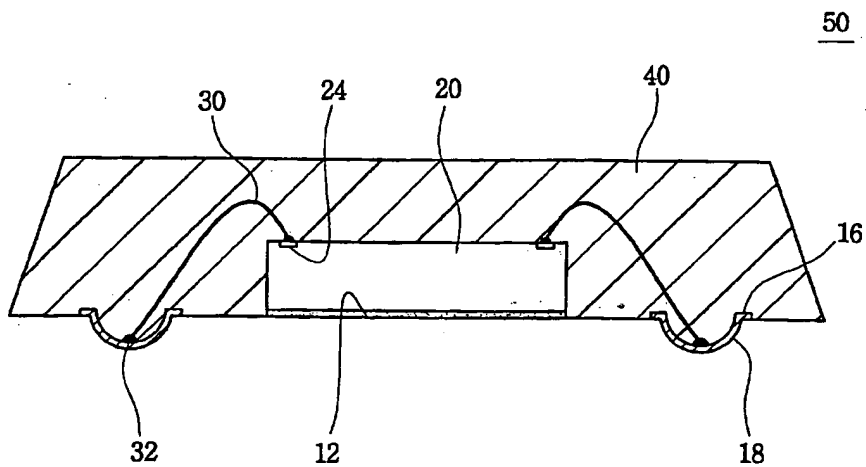


FIG. 4

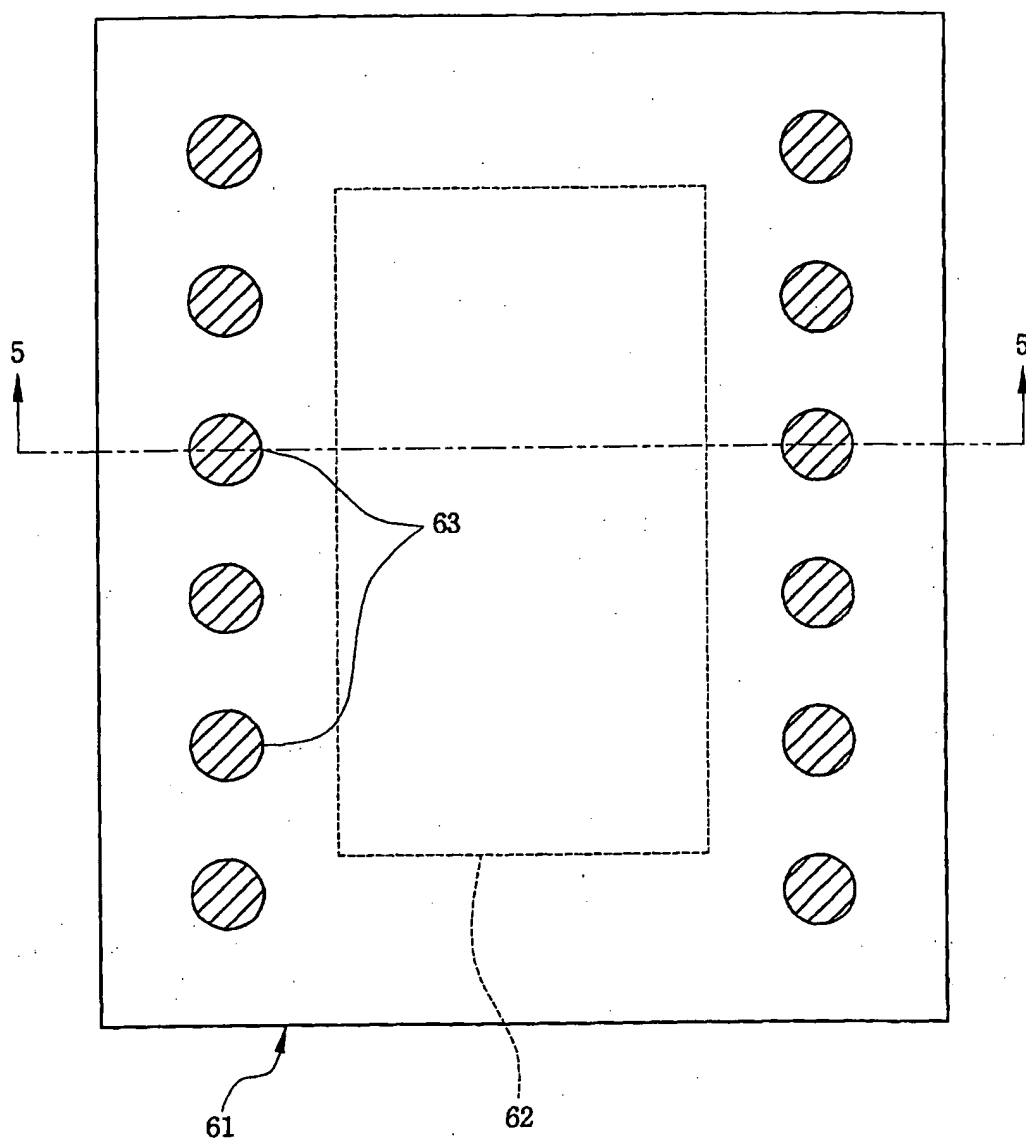


FIG. 5

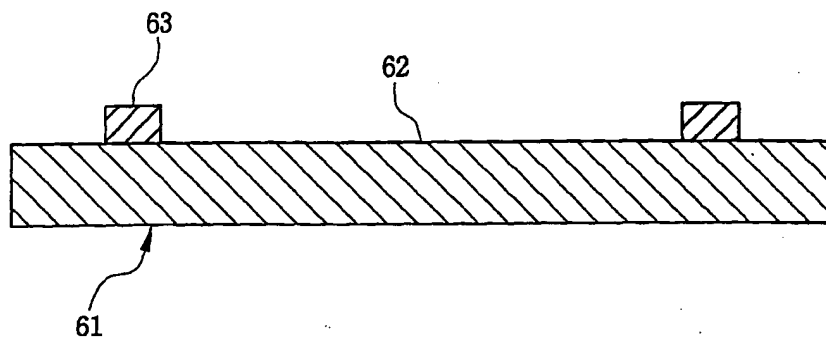


FIG. 6

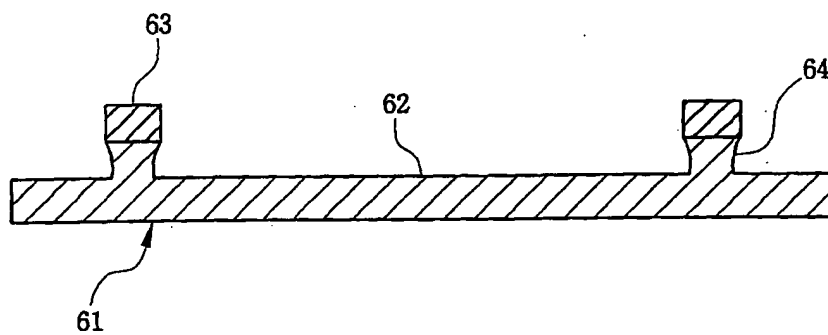


FIG. 7

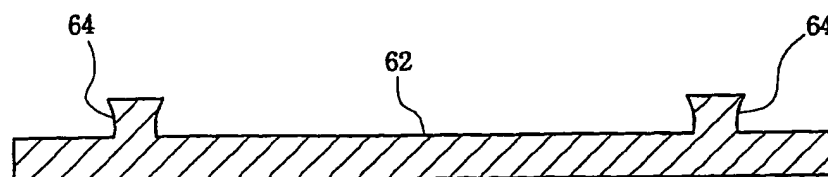


FIG. 8

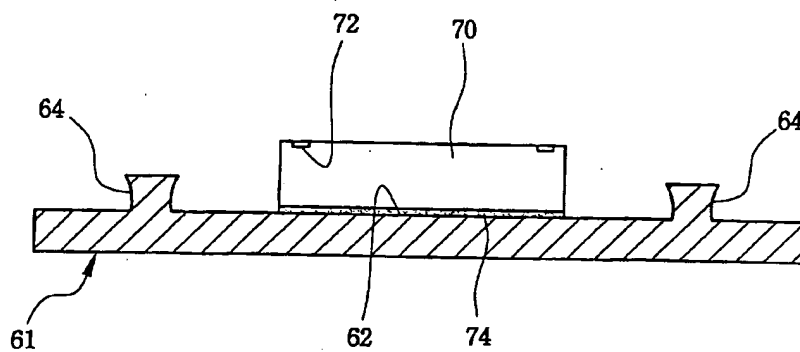


FIG. 9

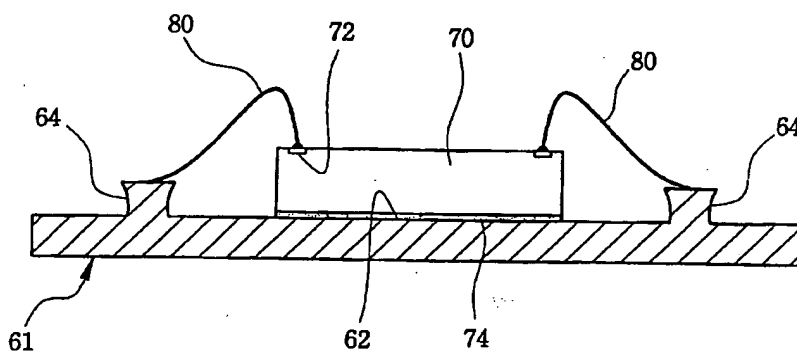


FIG. 10

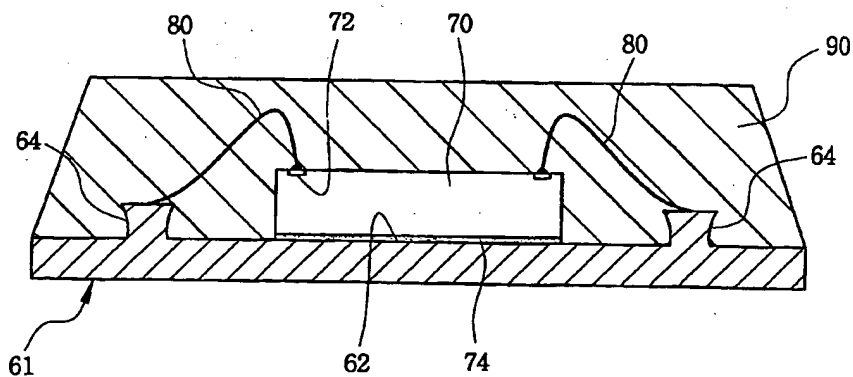


FIG. 11

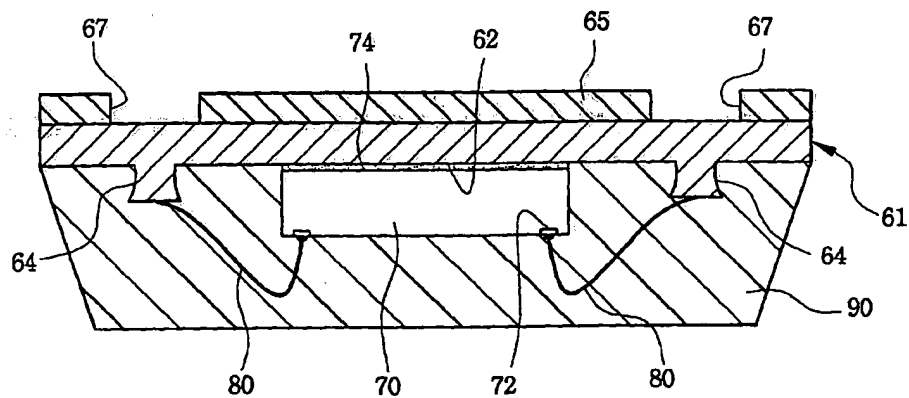


FIG. 12

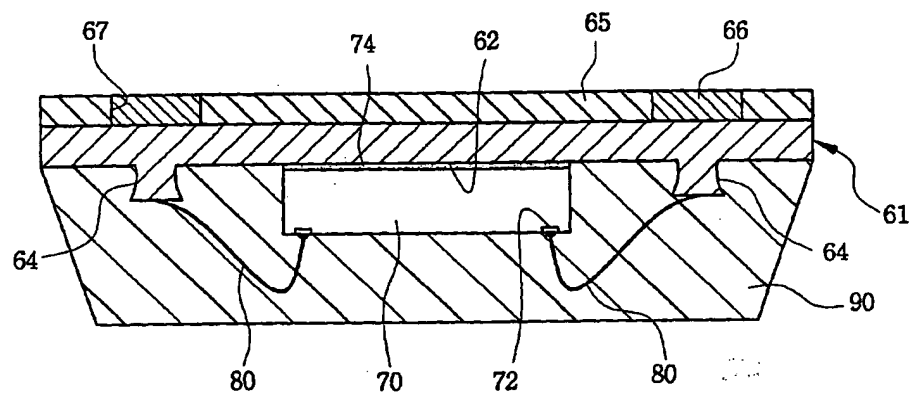


FIG. 13

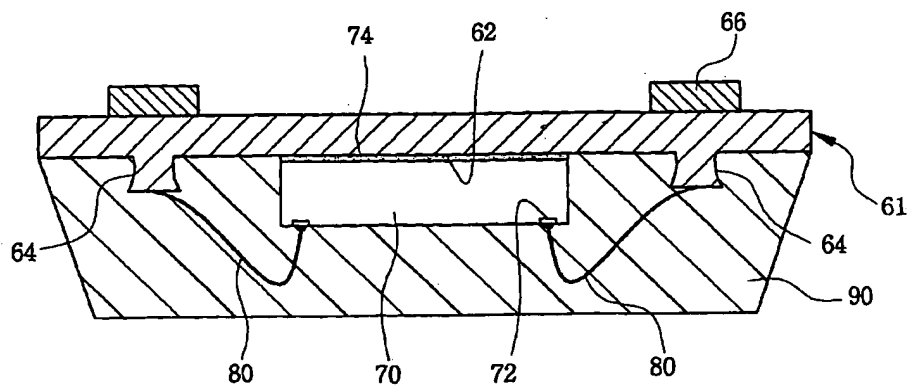


FIG. 14

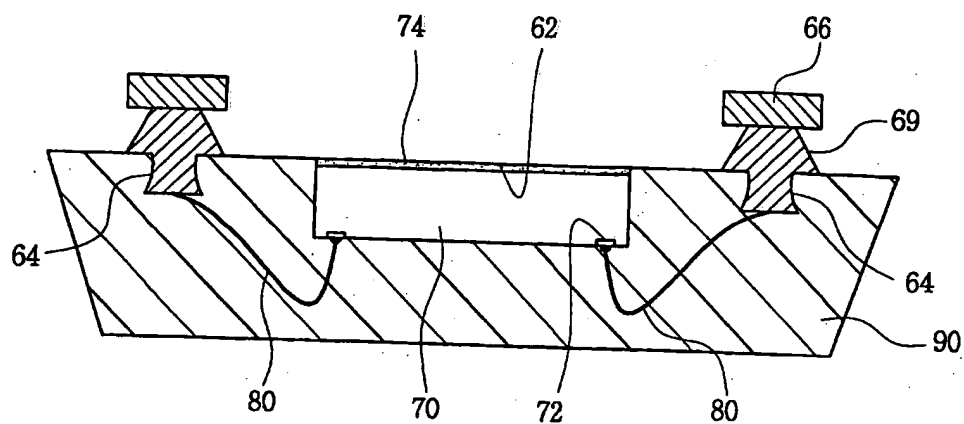


FIG. 15

